WHAT IS CLAIMED IS:

1. A method for encapsulating SCSI protocol for data transmission between two or more nodes across a packet-based network, comprising, at each node:

(a) identifying all other available nodes, and remote devices attached to each of said nodes, on said network;

(b) representing one or more of said remote devices such that they are made available to one or more local hosts;

(c) encapsulating an input/output (I/O) phase between one or more of said local hosts and one or more of said remote devices; and

(d) repeating step (c) for subsequent I/O phases.

2. The method of Claim 1, wherein said input/output phase comprises a command phase, a data phase and a response phase.

3. The method of Claim 1, wherein encapsulating said I/O phase comprises encapsulating an individual command for a Fibre Channel or SCSI protocol.

4. The method of Claim 3, wherein said individual command is a task management function, an error recovery function or other I/O processing function.

5. The method of Claim 1, wherein each of said two or more nodes is communicatively connected to a Storage Area Network ("SAN").

6. The method of Claim 5, wherein each of said two or more nodes is an interface between its SAN and said packet-based network.

7. The method of Claim 5, wherein one of said SANs is a back-up library.

8. The method of Claim 1, wherein each of said nodes is a Fibre-Channel-to-SCSI router.

9. The method of Claim 1, wherein said SCSI protocol is a Fibre Channel SCSI protocol.

10. The method of Claim 1, wherein said packet-based network is an Asynchronous Transfer Mode ("ATM") network, an Ethernet network, an IP network or a SONET network.

11. The method of Claim 1, wherein said packet-based network is a wide are network ("WAN").

12. The method of Claim 1, wherein said packet-based network is a dedicated link.

13. The method of Claim 1, wherein said packet-based network is a switched network.

14. The method of Claim 1, wherein said representing step further comprises the steps of:

mapping a local address for each of one or more of said remote devices attached to a node to an intermediate address; and

mapping each of said intermediate addresses into a remote address at another node.

15. The method of Claim 1, wherein said encapsulating step further comprises the steps of:

converting said I/O phase from said SCSI protocol to a protocol associated with said packet-based network; and

converting back said I/O phase to said SCSI protocol at a remote node.

16. The method of Claim 15, wherein said protocol associated with said packet-based network is an Asynchronous Transfer Mode ("ATM") protocol, an Ethernet protocol, an IP protocol or a SONET protocol.

17. The method of Claim 1, wherein said identifying step further comprises dynamically discovering all other available nodes, and the devices attached to said nodes, through a common server.

18. The method of Claim 17, wherein at least one of said two or more nodes is designated as said common server.

19. The method of Claim 17, wherein said common server is a separate device from said nodes.

20. The method of Claim 17, further comprising a heartbeat message for determining, at said common server, if a node drops from said network.

21. The method of Claim 1, wherein said packet-based network is any network that allows data packets to flow between nodes.

22. The method of Claim 1, wherein different ones of said two or more nodes can be communicatively connected to a SAN using different network protocols.

23. A system for encapsulating SCSI protocol for data transmission between two or more nodes across a packet-based network, comprising, at each node:

(a) instructions for identifying all other available nodes, and remote devices attached to each of said nodes, on said network;

(b) instructions for representing one or more of said remote devices such that they are made available to one or more local hosts;

(c) instructions for encapsulating an input/output (I/O) phase between one or more of said local hosts and one or more of said remote devices; and

(d) instructions for repeating step (c) for subsequent I/O phases.

24. The system of Claim 23, wherein said input/output phase comprises a command phase, a data phase and a response phase.

25. The system of Claim 23, wherein all instructions are stored in memory within each of said nodes.

26. The system of Claim 23, wherein said instructions for encapsulating said I/O phase comprise instructions for encapsulating an individual command for a Fibre Channel or SCSI protocol.

27. The system of Claim 26, wherein said individual command is a task management function, an

error recovery function or other I/O processing function.

28. The system of Claim 23, further comprising a Storage Area Network ("SAN") communicatively connected to each of said two or more nodes.

29. The system of Claim 28, wherein each of said two or more nodes is an interface between its SAN and said packet-based network.

29. The system of Claim 28, wherein at least one of said SANs is a back-up library.

30. The system of Claim 23, wherein each of said nodes is a Fibre-Channel-to-SCSI router.

31. The system of Claim 23, wherein said SCSI protocol is a Fibre Channel SCSI protocol.

32. The system of Claim 23, wherein said packet-based network is an Asynchronous Transfer Mode ("ATM") network, an Ethernet network, an IP network or a SONET network.

33. The system of Claim 23, wherein said packet-based network is a wide are network ("WAN").

34. The system of Claim 23, wherein said packet-based network is a dedicated link.

35. The system of Claim 23, wherein said packet-based network is a switched network.

36. The system of Claim 23, wherein said instructions for representing further comprise:

instructions for mapping a local address, for each of one or more of said remote devices attached to a node, to an intermediate address; and

instructions for mapping each of said intermediate addresses into a remote address at another node.

95 ~~36~~. The system of Claim 23, wherein said instructions for encapsulating further comprise:

instructions for converting said I/O phase from said SCSI protocol to a protocol associated with said packet-based network; and

instructions for converting back said I/O phase to said SCSI protocol at a remote node.

37. The system of Claim 36, wherein said protocol associated with said packet-based network is an Asynchronous Transfer Mode ("ATM") protocol, an Ethernet protocol, an IP protocol or a SONET protocol.

38. The system of Claim 23, further comprising a common server, and wherein said instructions for identifying further comprise instructions for dynamically discovering all other available nodes, and

the devices attached to said nodes, through said common server.

39. The system of Claim 38, wherein at least one of said two or more nodes is designated as said common server.

40. The system of Claim 38, wherein said common server is a separate device from said nodes.

41. The system of Claim 38, further comprising instructions for a heartbeat message to determine, at said common server, if a node drops from said network.

42. The system of Claim 23, wherein said packet-based network is any network that allows data packets to flow between nodes.

43. The system of Claim 23, wherein different ones of said two or more nodes can be communicatively connected to a SAN using different network protocols.

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